

Controlling the web with a PS5 Controller

Yes, I got a PS5 at a flash sale.

No, I am not a gamer.

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Agenda

✨ Introduction

🔧 Implementation

😬 Live coding

🎮 Demo

Web APIs

Third-party API

Not built in the browser

Interact with a web server

Eg. YouTube API, Telegram API,
Contentful API

Browser API

Built in the browser

Extend the capability of the
browser

Eg. Web Audio API, Web
Storage API, WebHID API

WebHID API

 Experimental

Human Interface Device (HID) is a bi-directional communication device

Connect Device

```
const devices = await window.navigator.hid.requestDevice({  
  filters: [{ vendorId: , productId: }]  
})
```

<http://www.linux-usb.org/usb.ids>

Exclude Device

```
const devices = await window.navigator.hid.requestDevice({  
  filters: [{ vendorId: , productId: }],  
  exclusionFilters: [{ vendorId: , productId: }]  
})
```

Get Connected Devices

```
const devices = await navigator.hid.getDevices();
```

HIDDevice Interface

```
{  
  collections: [{...}],  
  oninputreport: null,  
  opened: false,  
  productId: 3302,  
  productName: "Wireless Controller",  
  vendorId: 1356  
}
```


Open Connection

```
await device.open()
```

Data

Report

- Input Report
- Output Report
- Feature Report

Listen to input

```
device.addEventListener("inputreport", e => {  
  const { data, reportId } = e;  
  ...  
});
```

Listen to input

```
device.oninputreport = async (e) => {  
    const {data, device, reportId} = await e;  
    ...  
}
```


Connect Event

```
navigator.hid.addEventListener('connect', ({device}) => {  
  console.log(device);  
  ...  
});
```

Disconnect Event

```
navigator.hid.addEventListener('disconnect', ({device}) => {  
  console.log(device);  
  ...  
});
```

Close Connection

```
await device.close();
```

Revoke Access

```
await device.forget();
```


Browser Compatibility

	🖥️					📱					
	Chrome	Edge	Firefox	Opera	Safari	Chrome Android	Firefox for Android	Opera Android	Safari on iOS	Samsung Internet	WebView Android
<code>HID</code> 🧪	✓ 89	✓ 89	✗ No	✓ 75	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No
<code>connect_event</code> 🧪	✓ 89	✓ 89	✗ No	✓ 75	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No
<code>disconnect_event</code> 🧪	✓ 89	✓ 89	✗ No	✓ 75	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No
<code>getDevices</code> 🧪	✓ 89	✓ 89	✗ No	✓ 75	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No
<code>requestDevice</code> 🧪	✓ 89	✓ 89	✗ No	✓ 75	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No

Tip: you can click/tap on a cell for more information.

✓ Full support ✗ No support 🧪 Experimental. Expect behavior to change in the future.

Demo

harshil.dev/ps5/mario

Real World Examples

Ergometer Space - <https://github.com/tijmenvangulik/ErgometerJS>

Remap - <https://github.com/remap-keys/remap>

Resources

<https://nondebug.github.io/webhid-explorer/>

<https://developer.chrome.com/articles/hid/>

https://developer.mozilla.org/en-US/docs/Web/API/WebHID_API

<https://web.dev/hid-examples/>

Thank You!